A/F Sensor

As002–01

A/F Sensor Monitor Description

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MONITOR SUMMARY

The ECM uses the A/F sensor information to regulate the air/fuel ratio close to a stoichiometric ratio. This maximizes the catalytic converter's ability to purify the exhaust gases. The sensor detects oxygen sensor levels in the exhaust gas and sends this signal to the ECM.

The inner surface of the sensor element is exposed to outside air. The outer surface of the sensor element is exposed to exhaust gas. The sensor element is made of platinum coated zirconia and includes an integrated heating element. The zirconia element generates a small voltage when there is a large difference in the oxygen concentrations of the exhaust and the outside air. The platinum coating amplifies the voltage generation.

If the voltage output of the A/F sensor indicates RICH for a certain period of time even though voltage output of the rear oxygen sensor does not remain RICH or LEAN even though voltage output of the rear oxygen sensor does not remain LEAN, the ECM concludes that there is a malfunction in the A/F sensor. The ECM will turn on the malfunction indicator lamp (MIL) and a DTC is set.

If impedance or voltage output of the sensor (depending on model) is far from the normal range of values, the ECM interprets this as an open or short circuit in the A/F sensor or sensor circuit. The ECM will illuminate the MIL and a DTC is set.

RELATED DTC

Previous code:

Related DTCs	P1130 (Bank 1)	• A/F sensor voltage stuck LEAN/RICH • A/F sensor slow response • Open circuit between AF+ and AF– • Short circuit between AF+ and AF– • Short circuit between AF+ and GND • Short circuit between AF+ and +B (or VCC)
	P1150 (Bank 2)	

Extended code:

Related DTCs	P2195 (Bank 1)	A/F sensor voltage stuck LEAN
	P2197 (Bank 2)	
	P2196 (Bank 1)	A/F sensor voltage stuck RICH
	P2198 (Bank 2)	
	P2237 (Bank 1)	A/F sensor slow response
	P2240 (Bank 2)	
	P2238 (Bank 1)	• Open circuit between AF+ and AF– • Short circuit between AF+ and AF– • Short circuit between AF+ and GND
	P2241 (Bank 2)	
	P2239 (Bank 1)	Short circuit between AF+ and +B (or VCC)
	P2242 (Bank 2)	
	P2252 (Bank 1)	Short circuit between AF– and GND
	P2255 (Bank 2)	
	P2253 (Bank 1)	Short circuit between AF– and +B (or VCC)
	P2256 (Bank 2)	

MODEL YEAR CHART

Model Year	See Page
Camry CNG	As–14
1997 to 2000	As–15
2001	As–16
2002	As–18
2003 and 2004	As–20